# *Newsletter*

## *October 1994*

*In this issue…*

- *NetBSD—Unix comes to the Amiga!*
- *AmigaXV released to Aminet!*
- *Artificial Life explored*
- *Mitsumi's CD-ROM reviewed*
- *CUGI BBS finds a new home*

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CUGI meetings are held on the third Sunday of each month from 3:00 PM to 6:00 PM in the computer room at St. Andrew's College, Booterstown. All correspondence should be addressed to:

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Commodore Users
Group of Ireland

# Newsletter *Contents*

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**October 1994**

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*The deadline for articles for the next Newsletter is 31 December 1994.*

# Editorial

WELCOME TO the October Newsletter, which through the miracle of modern technology is brought to you in the nick of time for the November meeting.

Well, a lot has happened since the last issue. First of all, the club has undergone a few changes—welcome to new committee members Niall and Kevin—and of course, regular meetings are now on Sunday rather than Friday. Tommy has more to say about this in his article.

## Commodore?

Amazingly, despite the fact that almost three months has passed since I gave you the last update, the Commodore situation has not yet been resolved. However, it looks like things are *really* close now. Really!

The most recent information I have is that CEI (Creative Electronics International) the Florida based Amiga distributor has been successful in outbidding Commodore UK in the final bidding session. Commodore UK now have a week or so in which to counter-bid, and they must beat CEI's bid by at least $200,000 in order to be accepted. Whether or not they can do this remains to be seen.

So does this mean that the Amiga has a future? Well, I certainly hope so. While it might have been nice to see the Amiga based in Europe for a change, it seems likely that if CEI *are* successful, then CBM UK will take responsibility for the UK and perhaps European markets.

## Show Time!

Recently, CUGI received a letter from Commodore UK regarding a possible UK Developers Conference to be held in conjunction with the World of Amiga show in London next month. Apparently the response from developers around the world has been so positive that they have decided to postpone the developers conference until February 1995, so they they can do a proper job of organising it—an excellent move in my view, since a December conference wouldn't have left much time for international visitors to organise plane tickets etc.

Hopefully this conference will still go ahead even if CEI are successful in the buyout. On the other hand, CEI may well decide to hold their own conference based in the US. To be honest, this would suit me rather well since I'll be visiting the US for another three month stint at the beginning of the new year.

Speaking of the World of Amiga, all the things I've heard about it from people 'in the know' indicate that this is going to be a return to the great UK Amiga shows of old, rather than the games fests of recent years. Apparently a large number of international Amiga companies will be making a showing, and hopefully there'll be a few good bargains available as well. Several club members will be heading across the pond to see for themselves, so expect a report at the next meeting.

## US bound...again

As I mentioned earlier, it looks like I'll be heading across the big pond to the US once again. After more delays than a Commodore buyout (quite literally :-) our new graphics accelerator chip is almost ready to go into production, and I'll be writing some Windows drivers to make it perform to the best of its abilities.

This actually looks like being a very nice chip. It will be blisteringly fast, and it includes many snazzy features such as hardware texture mapping, realtime bitmap scaling, polygon rendering and so on—we are also targetting the 3D market as well as more mainstream areas like Windows. While it's not directly related to the Amiga, it's always interesting to see what's going on in the PC world; I should be able to give an update in the next newsletter, after I've actually had a chance to play with some samples.

## MUD, MUD, Glorious MUD

I have to confess that one of the reasons this newsletter is just a tad late (again!) is an online game called MUD. Longtime readers of this newsletter may recall various articles on MUD by Geoff and myself in past years, and yes, this is the same sort of thing that I'm talking about now.

Essentially, I've discovered that there are several incarnations of the original Essex MUD which can now be accessed fairly cheapily over Internet. Purely for the purposes of research (of course!) I've made it my business to investigate these over the past month or two, and in fact, was fortunate enough to reach the level of wizard on one of them.

If you're not familiar with MUDs in general, imagine one of the classic Infocom text adventures of the 80's. Now imagine that multiple players can play simultaneously, in competition with each other, add in a few hundred game-controlled creatures ('mobiles') to make things a bit unpredictable, and you're all set.

I'm so impressed with the development of the game since I last played it in Essex University in 1986 that I've been looking for a way to make it generally available to Irish players who lack Internet access. I hope to be able to announce more about this in the next newsletter, but if anyone can't wait, feel free to contact me. However, I can't be held responsible for the consequences. (It's *addictive*, as at least two club members will confirm!) In the meantime, if you already have Internet access, you can try it out by telnetting to 199.182.210.2.

That's about it for this issue. Remember, as always, we are looking for articles to print. You'll have noticed that this issue is on the slim side, and this is a direct result of having had almost NO submissions from members! Please help this to change. In the meantime, enjoy the newsletter!

E.C.

# Chairman's Chat

### *by Tommy Rolfs*

A NEW CUGI YEAR, and in many ways a new CUGI. A lot of things have changed, most noticeably CUGI meeting times. If you have not noticed the new meeting times then you have either not been to meetings for a long while or you have been recently but nobody else has.

Unfortunately we were unable to get out notices to all members about the changed times. I apologise profusely if anybody turned up on a Friday night to find nobody home. Please note that the club now meets on the third Sunday of each month (all twelve of them) from 3 pm to 6 pm.

## Out with the old...

The other major change is of course the committee. Sadly, we say goodbye to Aidan Hollinshead and Magnus Byne who were unable to stand for re-election due to other commitments. Needless to say, they will be greatly missed though we hope to see them at meetings from time to time. Into their place have stepped Niall Murphy and Kevin Phair who are just the right side of crazy needed for the job. The new committee looks like this:

| | |
|---|---|
| *Chairman* | Thomas Rolfs |
| *Treasurer* | Colin Dalton |
| *Secretary* | Niall Murphy |
| *Librarian* | Kevin Phair |
| *BBS and Tech. Officer* | Matt Brookes |
| *Press and PR Officer* | Karl Jeacle |
| *Newsletter Editor* | Eddy Carroll |

Eddy and myself are the only two to remain in our previous posts. Karl has stepped down as Treasurer, handing the reins over to Colin.

Now, I did say in the Chairman's report at the AGM that I didn't mind what the new committee did as long as they made sure that Colin was not Treasurer. Well, I fought tooth and nail but forces greater than I were at work—after all I'm only the chairman and who listens to the chairman? Still, the club has no credit card and a second signature is required on the checks so we should manage to stay in the black until Spring at least.

With Colin as Treasurer, Matt has taken on the responsibility of managing the club's bulletin board. In fact, you can read about all the changes and future plans for the BBS elsewhere in the newsletter. Matt is still in charge of technical matters and purchases, so he will be busy this year.

## Press Ups

Karl is moving into a newly created committee position. that of PR officer. With the change to larger but less frequent meetings. it is vital that we keep members informed about future meets and presentations. attract new members. and encourage guest speakers to come and talk at meetings. The aim is to ensure that members get the most from each and every meeting, and Karl will be covering all aspects of this in his new role.

The nature of the two remaining posts have not changed but the people occupying them have. Niall has taken over as Secretary and Kevin has become the Librarian. Kevin has a black belt in some mystic Eastern martial art so it would be advisable to ensure you return library items on time. In fact. now that we meet monthly we may need to increase fines for late returns. Remember. every time you forget to return items to the library, you stop other members from using them.

## Quiz, Quiz, Glorious Quiz

On the subject of reminders, remember to keep Friday 16th December free. as we are holding the CUGI Christmas Table Quiz that night at 8 pm. Don't miss it.

I have other news concerning myself but unfortunately am not in a position to say anything further at the moment. So, you'll just have to wait until the next newsletter to find out what it's all about. Until then. I hope you enjoy the new format we've adopted for the meetings. If you do (and even more importantly. if you don't!) be sure to let us know how you feel.

# CUGI BBS Update

*by Matt Brookes*

IT'S A FUNNY old world. One day you have a single A1200 (albeit a well expanded one), and the next thing you know, you have *two* A1200s, and an A500 with A690 CD-ROM drive. Add to that a few days later a Zappo CD-ROM drive, and before you know it, you have a whole family of Amigas!

The first A1200 is of course my own, the second and the A500 being CUGI's. "So why the heck does Matt have them?" I pretend to hear some of our modemless members ask. Good question! Read on...

## BBS on the move

At the first committee meeting after the AGM, I was appointed communications officer / BBS Sysop (in addition to dealing with CPC stuff), and the committee decided that it made sense for the BBS to be moved to somewhere where I could more easily access it. As a result, it now sits at 90 degrees to, and about three feet from my own A1200 here in Drumcondra, which is why you haven't been getting an answer if you've been calling the old number! Our new number is (01) 837 0204.

So what else is new? Well, as far as updating the BBS is concerned, things are progressing slowly but surely, though not as fast as I'd like. Unfortunately (or not, depending on your point of view :-) a new job coincided with the arrival of the BBS, so I'm now working most days of the week. Work aside, the BBS is slowly beginning to take shape in the sense of losing a lot of the rough edges that remained after its transformation from TransAmiga to DLG BBS software.

## Nodelist Nightmares

The worst of these was the bug which caused the BBS to die regularly for no apparent reason. I'm sure Geoff will testify to the number of times he came in to the school only to find the BBS down! The cause revolved around the nodelist, a huge file listing literally every FidoNet BBS on the planet. DLGMail (DLG's mail processor) and TrapDoor (the FidoNet frontend which handles answering the phone and transferring FidoNet mail to other systems) use the nodelist to find out where to send mail packets.

This list changes regularly as BBSs come and go, and change SysOp or phone number. Obviously it wouldn't make sense to send copies of the entire list around the world every time it changed, especially given the slightly unpredictable (and expensive) nature of a telephone based 'store and forward' network such as FidoNet. Instead, only the changes (or diffs as they're known) are sent, these being about 50K a week in archived form, as opposed to 1.5MB for the archived nodelist.

Each week when Nemesis Dungeon (CUGI BBS's main FidoNet feed) gets the new nodediffs, it packs them using the nice efficient LhA archiver, and holds the file until CUGI BBS calls in to collect mail. At that point, the nodediffs get sent along with any mail packets, and these diffs are then left in the *Inbound:* mail directory on CUGI BBS's hard drive, waiting to be unpacked and integrated into the main nodelist.

DLG uses *TPTCron*, a program which tells the system to do certain tasks at a particular time of the day and week, such as generating BBS filelists, polling other BBSs, and all the other menial tasks that this sysop would rather not have to worry about (or stay up for, in the case of polling for mail during Zone Mail Hour—2:30am to 3:30am!)

One of the things *TPTCron* does daily (since it doesn't know exactly when they might arrive) is to check for any nodediffs in the inbound directory and unpack them with PKXarc before integrating them with the nodelist.

Whoa there! Hit that pause button and back up a bit! "With PKXarc..." With what? Hmm... let's give that a try.

```
PKXarc x AnyOldArchive.lha
```

BOOM! Oh dear. I've just crashed the Amiga, and worse, invalidated the hard disk. Good thing I'm here to press 'Retry' when it's done rattling! Now imagine automating this process on a nightly basis, and you can see how a BBS could be a little unstable. The problem is that the nodediffs come to the the BBS as LhA archives, but PKXarc is only intended to handle the ancient ARC format. A quick change to *Fido:Batch/NLDiff.batch*, the script that gets executed whenever nodediffs are spotted, and all is well (finally!)

## A Day in the Life...

Fortunately, not all the problems a DLG Sysop comes up against are so obscure. A lot of the work revolves around simple tasks such as validating new users and new files, shunting files around to more appropriate areas, and generally keeping things tidy.

I've made some other changes to the BBS in the last couple of weeks too. One of these was to add a Guest account, so that new users who are just looking around don't have to go through the registration procedure until they really want to. This also avoids lots of redundant user accounts from people who just want to have a quick look at the system.

A lot of the old game doors weren't working properly, so I've cut back to the bare essentials, namely *Hack & Slash* and the classic *Adventure!*, which are now running as they should.

Users can now list new files when they log on, and tag the ones they want, saving the need to go through all new files individually.

On the subject of new files, CUGI BBS generates a text file once a night listing any new files which have been uploaded. This is posted to both a file area and a message area, so that points can see what has been uploaded without having to login to the BBS directly. (A point is a way of setting up your Amiga to look like a mini BBS, so that you can read CUGI's messages offline without running up a large phonebill.)

The only problem with this excellent scheme was that the list was generated even if there *weren't* any new files, which obscured the proper 'new file' lists, and was generally annoying. This has been fixed using a bit of AmigaDOS scripting: the `SEARCH` command is now used to search the list of new files for the string '0 bytes in 0 files' and if it is found, then an `IF WARN` statement skips over the commands to upload the new filelist.

Now that this is solved, CUGI's newfiles lists go into the ALL_FILES echo which is carried by most Irish BBSs, meaning that users of these BBSs can see what new files CUGI has available.

On the aesthetic front, some of the ANSI menus had become scrambled. These have now been fixed. The other changes are fairly minor, and not worth detailing here. However, one final change I'd like to mention is that the *Page Sysop* menu option has been reinstalled, so that users can get hold of me if I'm around.

All in all, the BBS was in a pretty good state of affairs. My thanks to Colin Dalton, the previous sysop, for his assistance during the transition.

If you haven't called us yet then it's probably because you don't have a modem. Well, now is a really good time to consider buying one. The release of the new V34 standard for 28,800 bps modems means that 14,400 bps modems such as the Supra used by CUGI BBS can now be had for well under £150, and even less if you go for one of cheaper brands.

See you on the BBS!

## For Sale

**1 Mb×32** 80 ns 72-pin SIMMs for A4000, A1200 RAM cards, or newer Macintoshes. £85 each. Phone Karl (01) 677 5365, evenings.

**Philips 8833** colour monitor with stereo speakers and Amiga cable. £100. Phone Karl (01) 677 5365, evenings.

# Artificial Life

## by *Niall Murphy*

THE CONCEPT of artificial life, and evolving genetic algorithms can hardly be called new. Since the foundations of the study by John Holland in the 1960's, this fascinating concept has lain mostly unconsulted in books that were either considered too 'fringe' or not worthy of serious attention until very recently.

It's not hard to see why modern computing science, which takes a very formalistic approach, considers the ideas surrounding the field somewhat bizarre. Imagine, for example, being able to breed from a network of competing algorithms your word-processor of choice; being able to establish what the best sorting algorithm is from first principles; watching a group of self-replicating multi-processor programs fighting it out between themselves to determine who will seed the next generation of code. Sounds slightly hard to grasp? Perhaps an example will help. In fact, this is the example that first got me hooked on genetic algorithms; hopefully it will inspire you as well.

## Creating Life

In 1986, a non-technical biologist wrote an artificial, evolutionary computer system on his laptop. His system was surprising clever for someone whom you might expect to have little, if any, patience with computers. Inspired by his particular viewpoint on biological systems, and the great explanatory power of the theory of evolution, Tom Ray created a microcosm of his back yard in his microcomputer.

Essentially, what Dr Ray did was to start off with the smallest self-replicating program that he could think of. It was 80 bytes long, so he called it creature 80. Tom seeded his machine with a copy of creature 80, and soon it had filled his entire memory space, churning out non-differentiated copies of itself.

But Dr Ray had added two very important features: death and mutation. When a creature called the self-copying routines, there was a random chance (controlled by an internal variable) that it would get be corrupted by the copying process, and so turn out an inaccurate model.

Conventional theory states that given a random mutation in the low-level code of a program, the most likely outcome for it would be to crash spectacularly. Tom avoided this problem very cleverly: his algorithms ran not in the native assembly code of the machine he was using, but on a virtual processor within the machine. And that wasn't all: the instruction set he used was tailored to his own ends, being reduced in size for one thing, and reduced in scope for another. These two strategies taken together meant that 'dead' mutations, mutations that were nonsence, would not crash the machine and would in fact enhance the chances of a computationally (genetically? evolutionarily?) valid algorithm arising.

## Life or Death?

Death was handled by a simple module. which Tom nicknamed 'The Reaper'. At predetermined time intervals. The Reaper would either kill the oldest copy of any given algorithm in memory. or the least copied one. which meant that any non-copying algorithm would be quickly overwhelmed by the copying ones.

Scarcely 10 minutes after Tom first ran his ingenious setup. he observed that something strange had taken place: a different creature had evolved. This creature. creature 79. was initially outnumbered by the 80s but quickly grew to outsize them in numbers. Since it had a slight evolutionary advantage by being that one byte smaller. it ran faster and hence was able to make more copies of itself within a given time frame. Quickly. the RAM became filled with creature 80s and 79s counter-punching each other.

The next remarkable thing to happen was creature 45. You may think that this sounds very small compared to the others. and you'd be right. When he disassembled its code. Tom discovered that it was effectively a *parasite*—it forced other algorithms to use their self-copying code to copy itself!

Creature 45 lived off creature 80. It couldn't live off 79. because their code was too different. 45 and 80 danced the classic co-evolutionary tango that foxes and rabbits. in fact any predator and prey, have been dancing for the past couple of eons. When one suppply went down. so did the other. When one rose. so did the other. A parasite by the book. if there ever was one.

Tom found many more delights deep within his program. Social creatures. co-operating creatures. social parasites. hyper parasites. the list is endless. But the final interesting thing I have to say about these creatures is this:

## Playing God

Tom attempted to remove the bias his system had towards smaller algorithms. With an eye towards seeing how complex an algorithm he could get to evolve. he decided to allocate processor time on a fixed linear multiple of how big the individual algorithm was. So. on this scheme. something that was a hundred bytes long would get twice the time that a 50 byte creature would get.

Then along came creature 36. to shatter all his dreams. 36 was very cunning. Whenever the system came along to allocate processor time. creature 36 rotated a byte in its header that made the system think it was 72 bytes long instead of 36. Sneaky. As you can imagine. it did very well. but did not necessarily result in what Tom had envisaged!

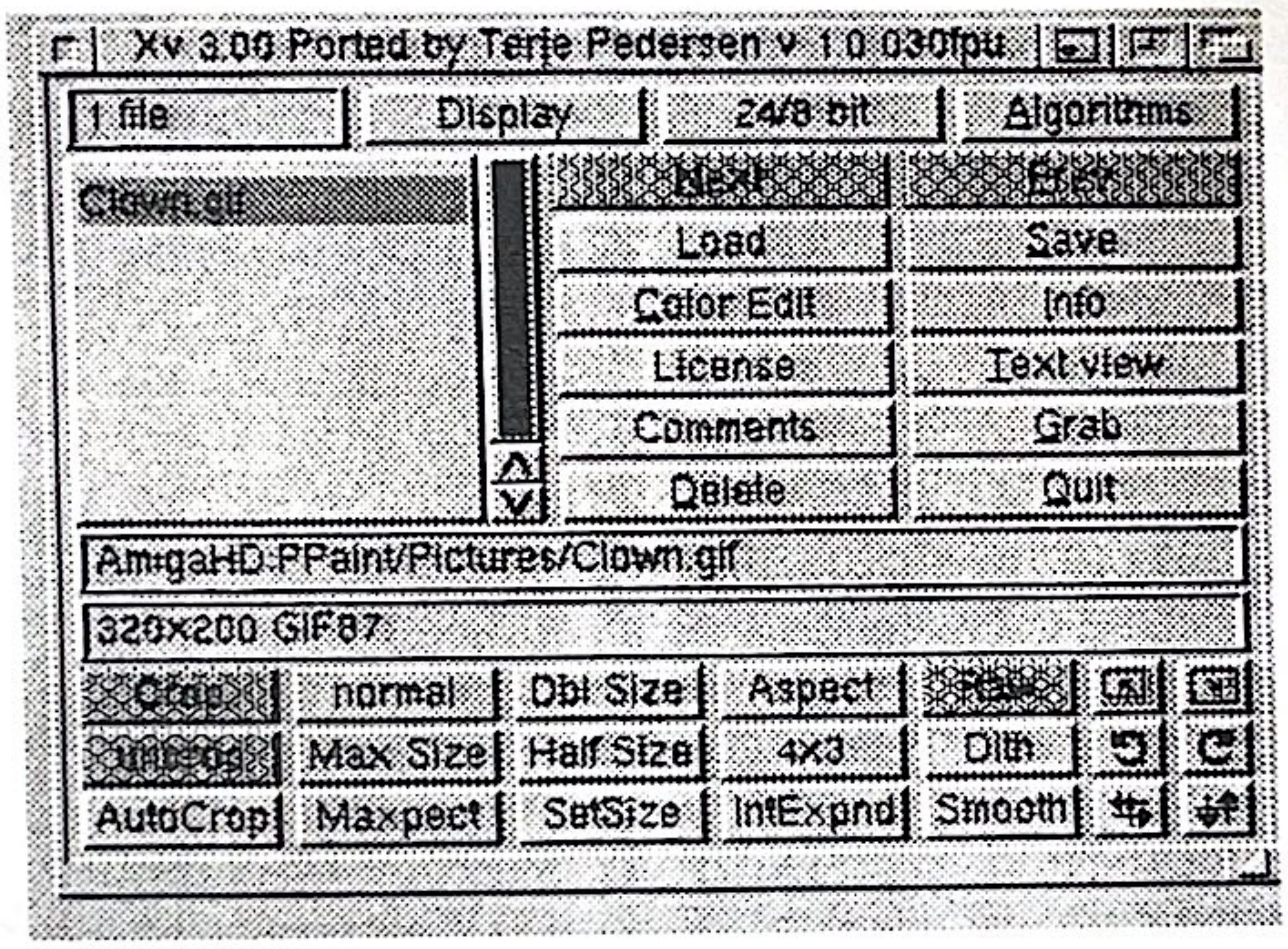
This system is called Tierra. and the source is available on Internet for ftp from `alife.santafe.edu` for your compiling pleasure. I myself am currently struggling with getting it to run on the Amiga. and I'd love to hear from someone out there interested in giving me a hand!

# X Marks The Spot

### *by Colin Dalton*

IF YOU have ever used a Unix workstation to display a picture. the program you used was probably xv. the shareware image display and processing program by John Bradley. Until recently. this very powerful package was unavailable to Amiga users. However. this is no longer the case. thanks to the efforts of Terje Pederson who performed the Amiga port.

What exactly is xv? Calling it a picture viewer is like calling a Ferrari a car; it does much more besides. In fact. some of its features would put ADPro to shame. So. let's take a look.



Xv 3.00 Ported by Terje Pedersen v 1.0 030fpu

1 file

Clown.gif

AmigaHD:PPaint/Pictures/Clown.gif

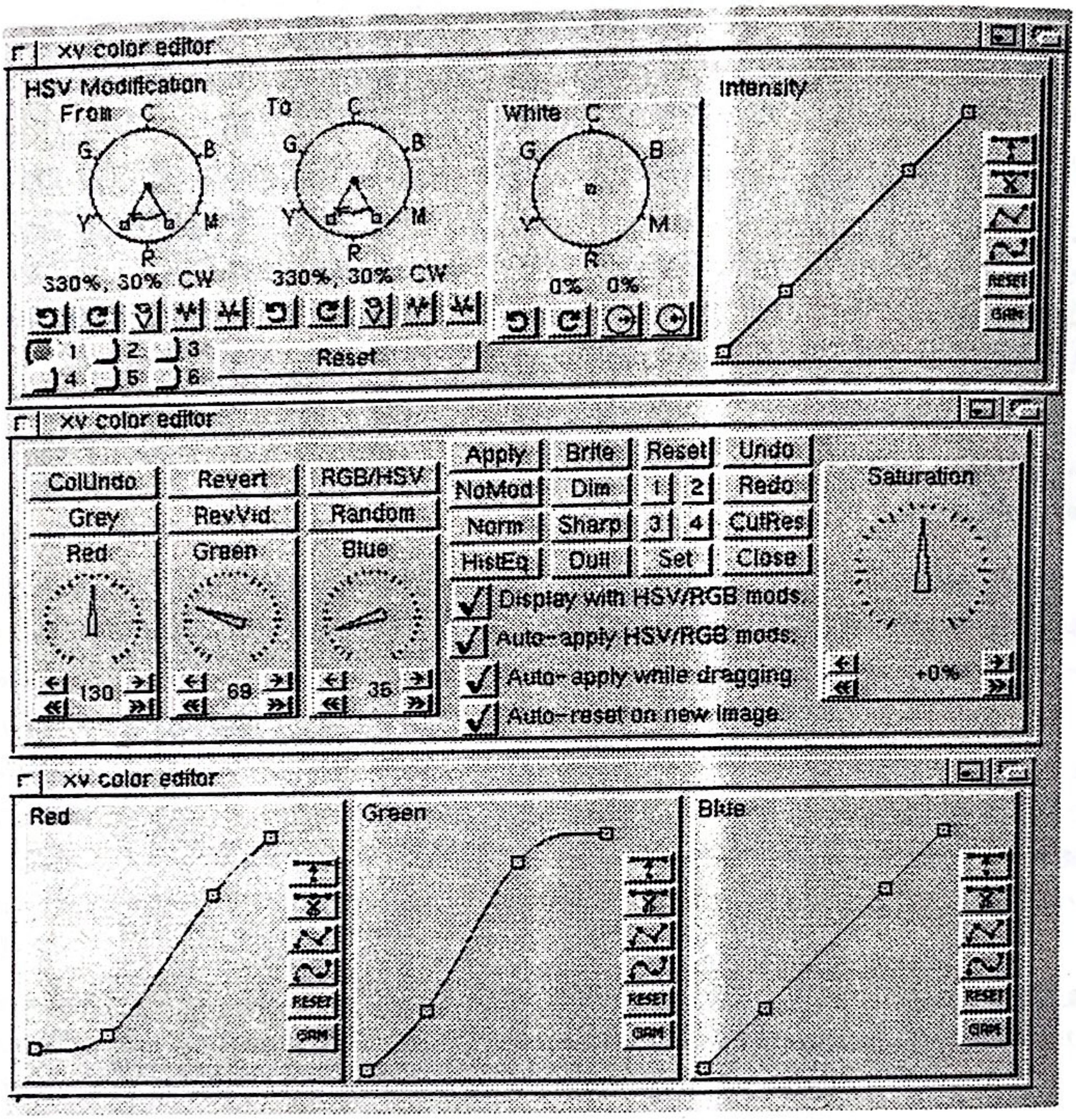
320x200 GIF87

*xv's main control window. where images are loaded.*

When you load xv. you are presented with a small information window and xv's familiar control window. It looks exactly like the X version. except that Intuition is the window manager. The Amiga port of xv uses MUI (Magic User Interface) for its UI. so you will need to have this installed as well.

xv's use of MUI. and the range of features it provides mean that you need a fairly big machine to run it—don't expect to be able to load large images if you only have 4 Mb. That said. it seems to run comfortably on my 10 Mb system. and anyone who is is remotely serious about image processing will have at least that much memory.

Used at its most basic level. xv is an image viewer. You can view images on a custom screen or on your Workbench. and Picasso owners will be interested to know that xv supports chunky mode. both for Workbench and custom screens. Of course. the standard screenmode requester is used to select your preferred screen.



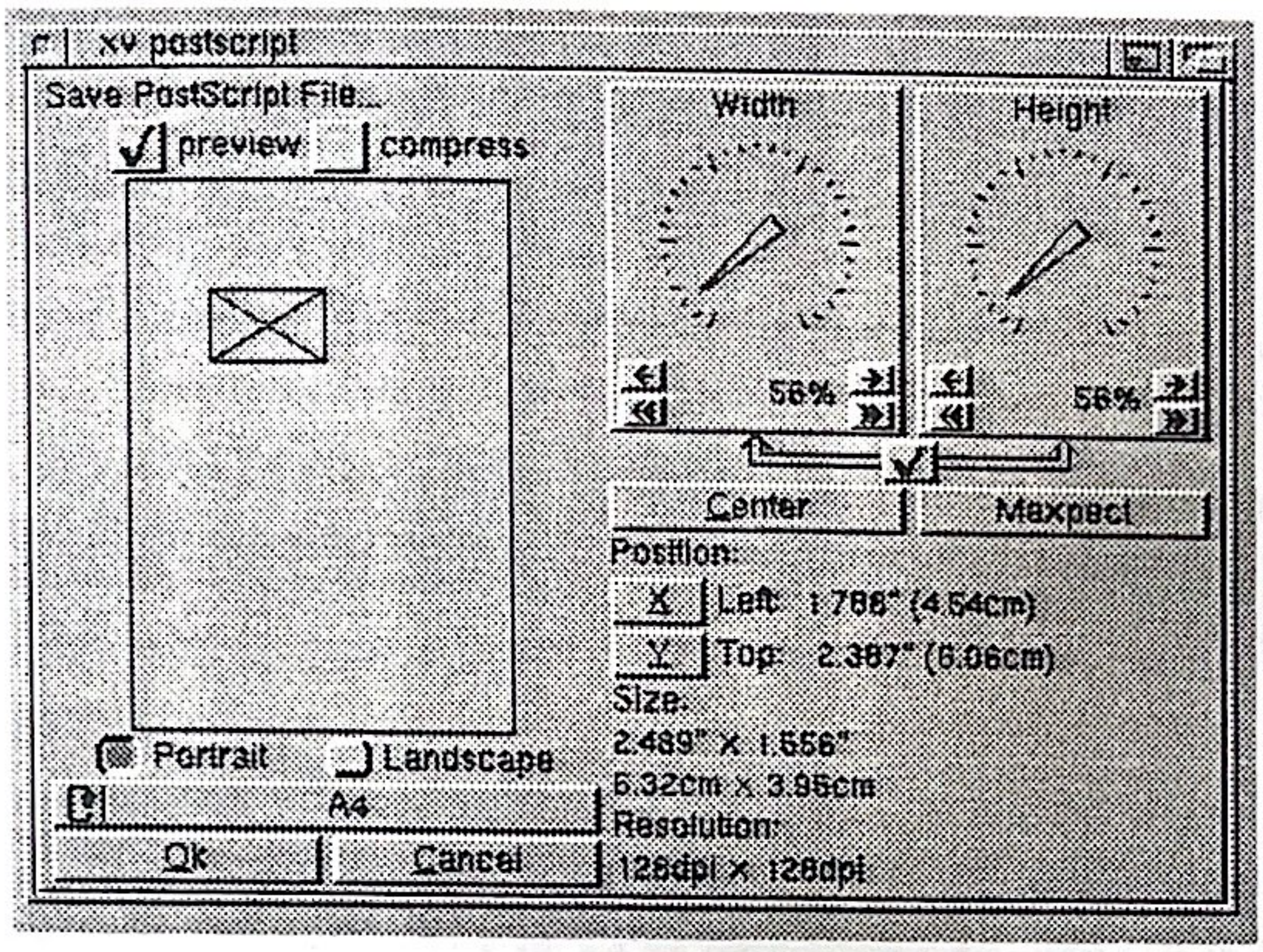
☑ Display with HSV/RGB mods
☑ Auto-apply HSV/RGB mods
☑ Auto-apply while dragging
☑ Auto-reset on new image

*xv's colour control windows feature a bewildering number of knobs.*

When displaying the image, you can choose from three different trade-offs between speed and dithering quality, and three HAM dithering methods, so if you just want a quick look at the image, you don't need to waste time waiting for it to be dithered precisely. xv supports plenty of image formats, including PostScript, which it loads via datatypes, unlike other formats which use built-in code.

Once loaded, a number of sizing and scaling functions can be performed on the image. Holding down the right mousebutton and dragging marks out a square that can be cropped or zoomed in. You can also alter the aspect ratio, mirror the image, and rotate or size it to your heart's content—ideal for tweaking scanned images to perfection.

xv's powerful colour editing and balancing features also make it ideal for tweaking scans—you can remap whole ranges of colours to an alternative hue. For example, you could make a red rose blue by mapping all the colours in the red area



Position:
X Left: 1.788" (4.54cm)
Y Top: 2.387" (6.06cm)
Size:
2.489" x 1.556"
6.32cm x 3.95cm
Resolution:
128dpi x 128dpi

*xv allows extensive control when saving PostScript files.*

of the colour wheel to the blue area. Of course, you can also convert to greyscale and alter the individual red, green and blue intensity levels (or use the HSV colour model if you prefer), as well as apply gamma correction.

Apart from anything else, xv's wide range of dials, charts and buttons are great fun to play around with :-)

In addition to simple colour balancing, xv can also perform other image processing features, namely blurring, edge detection, embossing, and an oil painting effect. While these are quite slow (especially in the highest quality mode), they produce excellent results.

When you have finished tweaking your image to perfection you can save it in a variety of formats, including GIF, XBM, PBM, Sun Rasterfile, BMP, PostScript, IFF ILBM, JPEG and TIFF.

The PostScript saver is especially good. You are given the option of scaling the image to a given size or resolution, and a preview of the size of your image relative to the page is given. This preview image is draggable, so it is possible to position the picture exactly. You can also save it with a TIFF preview image, so that programs like Quark Xpress can display it onscreen (normally you can't view PostScript images without a dedicated PostScript interpreter).

The JPEG saver is also good, with dials for selecting the smoothing and quality—the lower the quality, the smaller the file size.

So where is the catch? Well, until recently, Terje wasn't allowed to release xv for the Amiga, since the original author was reluctant to grant permission for the distribution. However, at the time of writing, this has finally been resolved and xv is now available on Aminet as `/pub/aminet/gfx/edit/amigaXv.lha`. Of course, you can also download it from CUGI BBS.

What will also be a problem are the demands xv makes on your system—this isn't a program you will be able to get much use out of on a 2 Mb Amiga, and even 4 Mb is tight. There are also people with a bizzare aversion to MUI, who aren't going to like xv's dependence on it.

I give xv a big thumbs up. Anyone who needs basic image processing and support for a wide range of image formats should look no further than xv—as long as they have the RAM, that is!

# NetBSD/Amiga 1.0

### *by Karl Jeacle*

SOME YEARS back, the word on the Amiga Usenet groups was that legendary Amiga programmer Matt Dillon was going to port 4.4BSD Unix to the Amiga. This was an incredible undertaking, but if anyone could do it, Matt Dillon could. For a variety of reasons, the port never happened, and the dream of a freely available Unix for the Amiga vanished.

But in early 1993, a community of users around the world on the Internet starting working together on a version of Unix called NetBSD. Now, almost two years later, comes NetBSD 1.0.

## A brief history of...

I'm not going to give yet another inaccurate history of Unix that you usually read in articles like this. Instead, I'll just refer you to an excellent book by Peter H. Salus: *A Quarter Century of Unix* (ISBN 0-201-54777-5). This book gives an account of the first twenty-five years of Unix from the early user group meetings right through to the lawsuits of recent years.

What I will tell you, though, is that there have been two predominant 'flavours' of Unix available over the years: System V and BSD. The story goes that AT&T's System V Unix was the domain of industry and the commercial user, while BSD was the Unix of choice for academia, no doubt from its roots at the University of California, Berkeley.

Technically, NetBSD is a BSD Net/2 and 4.4BSD-Lite derived system—a fully functional Unix-like operating system which currently runs on nine different architectures. NetBSD/Amiga is the Amiga port of NetBSD.

## System requirements

NetBSD requires an Amiga with a 68020 or better with some form of FPU and MMU. The minimal configuration requires 4Mb of RAM and about 65Mb of disk space. To install and use a reasonable environment with the X window system, at least 8Mb of RAM and about 150Mb of disk space is required.

All the basic Amiga hardware is supported including the floppy drive, parallel port, serial port, mouse, ECS, and AGA. A4000 IDE is supported along with most SCSI host adaptors, including those from Commodore, GVP, 12 Gauge, IVS, Wordsync, Magnum, Warp Engine and Zeus. A2024, Retina Z2 and Retina Z3 are the only graphics cards supported, and A2065 and Hydra ethernet networks cards are also recognised.

The above describes what is 'officially' available or indeed what is supported by release 1.0 of NetBSD/Amiga. However, work on many other cards and devices is underway and in many cases is already complete, just not integrated into the NetBSD source tree. This includes support for A1200 IDE, Fastlane SCSI, Multiface-III Serial, and Cirrus Logic 5426 based video cards such as the Picasso-II, Spectrum and Piccolo. Support for PC cards, via the GoldenGate II bridgecard, is also being worked on. In fact, there are already a number of NetBSD/Amiga users using NE1000 and NE2000 ethernet cards designed for PCs.

## Installation

The compressed NetBSD/Amiga distribution (excluding sources) isn't too far short of 20Mb. Getting this onto your system is obviously going to be a big problem unless you have a tape drive or CDROM. Of course, floppies will work if you have the patience—but finding someone willing to supply you with a version on floppies could be difficult!

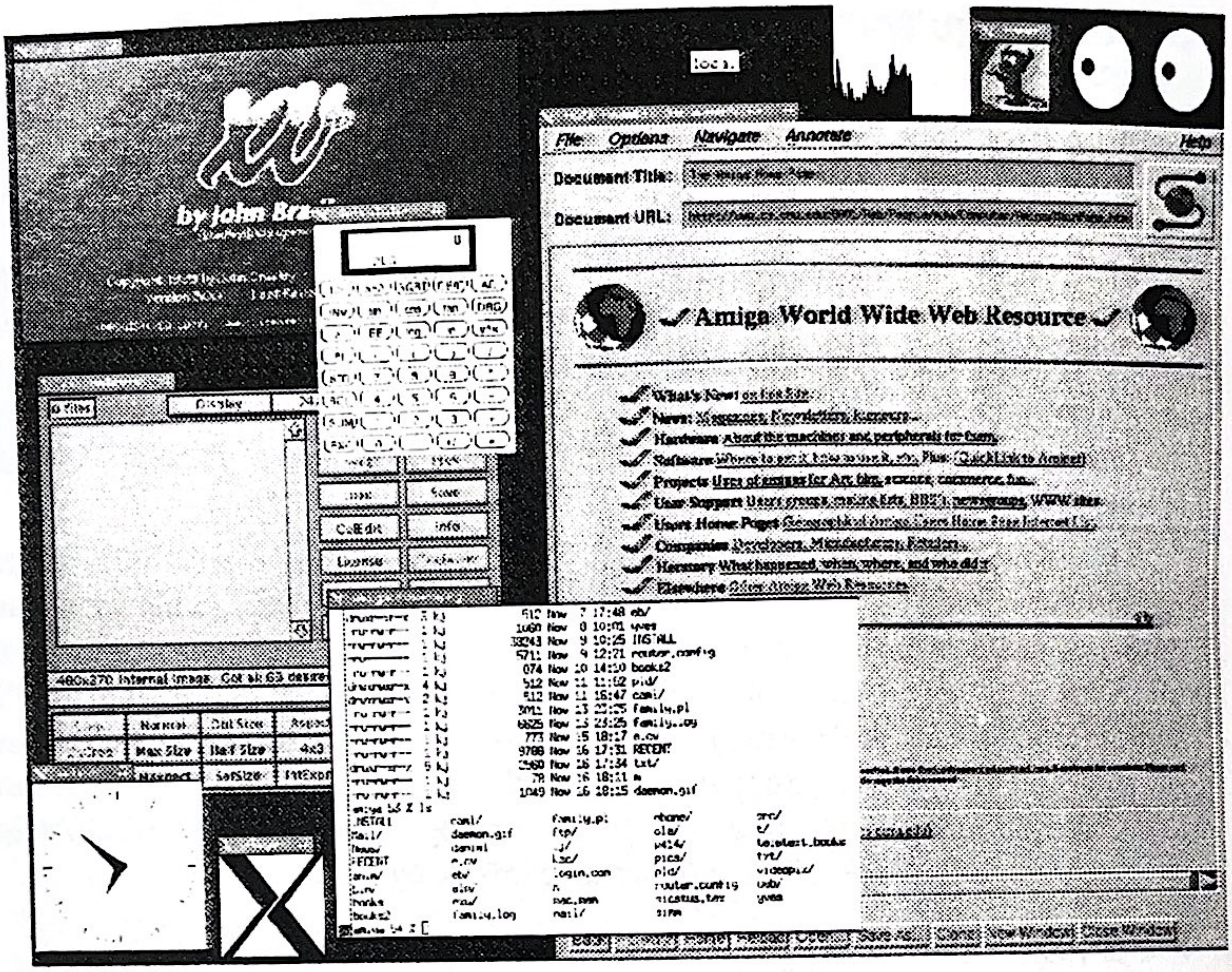
The NetBSD distribution contains a 'Generic' kernel with support for all supported Amiga hardware, a bootstrap program to boot that kernel, and a boot floppy with a minimal BSD root filesystem.

The filesystem on the boot floppy is configured to allow you to make a SLIP connection, configure ethernet, mount an NFS disk, start an FTP session, read from a SCSI tape drive or simply mount and read an AmigaDOS partition. This enables you to gain access to the NetBSD distribution sets. These sets can then be unpacked one by one onto your hard disk.

## Distribution archives

The NetBSD binary distribution comes in the following sets:

**base10** The NetBSD/Amiga 1.0 base binary distribution. This must be installed. Contains base utilities to bring the system up. Includes shared library support. *7Mb gzipped, 19Mb uncompressed.*



*Simple maths: Amiga + Picasso + NetBSD = Unix Workstation.*

| | |
|---|---|
| **comp10** | The NetBSD/Amiga Compiler tools: C, C++ and Fortran compilers, linker, system include files, system libraries, and manual pages for these utilities in addition to system call and library manual pages. *4Mb gzipped, 12Mb uncompressed.* |
| **etc10** | All the system configuration files which reside in `/etc`. *50K gzipped, 280K uncompressed.* |
| **games10** | The usual bunch of simple games you find on Unix systems. *1Mb gzipped, 3Mb uncompressed.* |
| **man10** | Manuals for the binaries and other software contained in the base set. All other man pages are included with their respective binaries. *730K gzipped, 3Mb uncompressed.* |
| **misc10** | System dictionaries, typesettable document set, and man pages for some other NetBSD architectures. *2Mb gzipped, 6Mb uncompressed.* |
| **text10** | Text processing tools including groff, and related programs. *784K gzipped, 3Mb uncompressed.* |

A full complement of source distribution sets is also available.

## Features

Almost everything you'd expect to find in a BSD derived system like SunOS or Ultrix is included with NetBSD. Configuring and administering the system is similar, as is porting applications.

A major advantage of running NetBSD is its networking software. Why run AmiTCP when you can run the original software? An Amiga based NetBSD system can perform just about any Internet related task imaginable.

Another feature which some NetBSD/Amiga users may find useful is its binary compatibility with the Sun3 architecture. NetBSD can run SunOS binaries which ran on early Motorola 680x0 based Sun workstations.

As can be seen from the binary distribution sets listed above, NetBSD is pretty complete. However, lots of popular applications from the Unix world either have been ported or will port without too much trouble to NetBSD. Some ready-to-run applications I've FTP'd include xv, Mosaic, fvwm, top and lha.

It is important to note that NetBSD is a complete operating system, and hence replaces AmigaOS. Both systems can coexist on one hard disk, and files can be shared, but only one system at a time can be running. I suppose you could argue that NetBSD isn't very system friendly, as it completely takes over the system...

## The competition

MINIX was created by Professor Andrew S Tannenbaum of the Vrije Universiteit in Amsterdam as a teaching aid for students taking his course in operating systems. The version distributed by Prentice-Hall only supports 68000 and floppy based systems. Patches for CBM SCSI and 68020/030 support must be acquired elsewhere. There is no support for the 68040 or IDE drives. See my article on MINIX in the October 1992 CUGI Newsletter.

Commodore's Amiga Unix (AMIX) was the first commercially available full implementation of System V Release 4 Unix. While a fine product, it was never a commercial success and was dropped by Commodore some time ago. Major disadvantages include no 68040 support and the fact that it is obviously no longer supported.

Linux is probably the most successful of the freeware Unix implementations on Intel platforms. Originally designed to make exclusive use of 80x86 features, it has been a difficult task to get a Motorola 680x0 port up and running. However, some dedicated programmers have done just that, and Motorola versions (including one for the Amiga) are available. Linux on Motorola is progressing rapidly, but is still probably about one year behind the NetBSD Motorola effort. Linux on Intel is ahead of both.

AmiNIX and ANIX are both very new on the scene, with little known about either. Both are the work of individual programmers, and while promising great things, probably fall a good deal short of what's currently available.

## Where to find it

The *Meeting Pearls Vol.1* CD had a copy of NetBSD 0.9, but this release is now long out of date. At the time of writing, NetBSD 1.0 has just been released, so by the time you read this, a number of CDs will probably be available containing the full 1.0 release. *Meeting Pearls Vol.2* promises to have a full copy of the NetBSD/Amiga 1.0 distribution.

Although 1.0 has been released, development is still under way with much work being carried out on support for as many third-party cards as possible. So, it is likely that in addition to the stock 1.0 distribution you will receive kernels or sources with support for a wider range of Amiga equipment.

If you're lucky enough to have Internet access, you can find the latest version of NetBSD/Amiga at:

`ftp://ftp.uni-regensburg.de/pub/NetBSD-Amiga/`

You could also try reading the Usenet newsgroup `comp.unix.amiga` for general discussion on Unix implementations for the Amiga.

## Conclusion

Running a prerelease of NetBSD on my Amiga 4000/040 with Picasso II, I was impressed. An X display of 1152×900 in 256 colours was as usable as any X terminal or low-end Unix workstation. Of course, you're not going to get DEC Alpha performance on an Amiga, so applications will run slower, but for most day-to-day tasks, performance is more than acceptable.

There's not much more to say. It's BSD Unix for the Amiga. And it's free.

# Mitsumi FX-001D CD-ROM

### *by Ben Lewis*

HAVING READ various articles in this and other magazines about the way in which CD's can change your life and give you something to boast about (not to mention fill up your hard drive at an alarming rate). I decided it was time to see what it was all about.

My first faltering steps towards the light began with the purchase of a second-hand CDTV. However, the light soon dimmed, partly due to a non-functioning ParNet cable. Just as well, or else I might never have got rid of it. (Cue member + ad in *Buy & Sell* = sold).

## Pricey SCSI

Having bidden it a sad farewell, I started to look around for what I had wanted in the first place: an internal CD-ROM drive. Many of the ones I had seen were too expensive for my needs, as they required a SCSI interface. I didn't really see much point in getting anything less than SCSI-II, which knocked the whole idea on the head due to the high cost of an interface (around £300) plus £240 or so for a SCSI-II compatible CD-ROM.

## The Cheapskate's solution

However, a cheaper alternative soon came on the market. Enter the Mitsumi FX-OO1D + Tandem IDE interface. This was much less damaging to the bank balance, and I ordered them on a Tuesday morning from First Computer Centre. The total came to about IR£207 (I hope this won't be a bargaining point in future, eh Tommy? :-) The two packages arrived on the following Wednesday, and I was ready to install them.

## Where does this bit go?

After unpacking the hardware, I proceeded to take my precious A4000 apart. After some wiggling, the Zorro interface was installed.

Now to start on the drive. To get at the 5 1/4" bay on the 4000 requires some inventiveness: the front cover has to first be taken off by undoing a series of clips, most of which are hidden in awkward places. This done, the blanking plate was removed and the drive was inserted into the bay. There is very little space for a CD-ROM in the 4000, and the power lead going into the back of it is very close to the fan. However, I have had no problems there yet.

Once the hardware installation was completed, I turned to the software required for the Amiga to recognise the drive. Tandem provide their own driver software and use Commodore's Installer utility, so this was relatively painless. The driver refused to recognise the drive at first, but a bit of wiggling of the cables helped. The drive was now up and running.

## Technical bits

The drive itself is a double speed unit offering transfer rate of 300 K/s transfer rate and access time of 300ms. It has a motorised tray (no caddy—bliss) and a headphone socket at the front. This is the same drive that Zappo use in their CD-1200 unit.

On the audio side, I had to plug in the PC interface card provided as well, and route the sound through this to my hi-fi. Fortunately, space is not a problem here—I only have these two cards installed. There is a busy light on the front (green, unfortunately). Software is supplied to play audio CDs, and as far as I know, this utility is the only one that works—I have tried *Jukebox* and *SCSIUtil* without success.

There is a caching program, and another program to dismount the drive; All this software comes with the IDE interface. PC drivers are supplied with the drive.

I borrowed some CDs from a willing supplier (thanks, Geoff!) and found a few bits and pieces that have come in useful. I intend to get some photos processed onto CD to see the difference in quality. CDs are unbeatable for clipart collections, fonts and the like: it is very useful to have everything on one CD rather than looking through hundreds of floppies.

## Conclusion

All in all, I'm very happy with this drive. It does all it's supposed to do, and does it well. One nice touch is a CD eject program, which puts an eject button onscreen that can be used to open and shut the tray.

This is certainly the cheapest way to get a CD-ROM going on your A4000, and I would heartily recommend it.

# Diary Dates

Here's the schedule for the rest of the year. Make a note in your diary!

| | |
|---|---|
| 20 Nov | The first ever Sunday meeting. |
| 16 Dec | Christmas Quiz! Come along and have some fun. |
| 18 Dec | December Sunday meeting. Will CBM have an owner for Christmas? |
| 15 Jan | January Sunday meeting. You expect us to plan this far ahead? Hah! |
| 19 Feb | February Sunday meeting. |

# The CUGI Library

## *by Kevin Phair*

As SOME of you may know, the CUGI library is 'under new management'. This will bring one or two changes. Before I go onto that subject however, I'll detail some of the aspects of the CUGI library, now that I have caught the eyes of those of you who have always skipped this section before because it always looked the same.

First of all, the CUGI library has a good selection of technical books pertaining to the Amiga, including works such as the ROM Kernel Reference Manuals (both second and third editions), guides to the basic Amiga CPU and FPU, and 'C' programming references. There are also some more general books, for example, the *Desktop Video Guide* and *Amiga Tricks and Tips*. If you have one of the older Commodore machines, such as the C64 or C128, you'll find plenty of books relating to the hardware and programming of those machines.

You are probably aware that the CUGI library also has some hardware available for loan. This includes an audio sampler, a video digitiser (the VIDI-12) and a hand-held scanner. Other items of general interest are Amiga-related videos and previous issues of the CUGI newsletter.

Of course, fines for overdue items will still be in operation, although I am currently deciding whether to retain the fixed rate of 50 pence or make it a variable rate according to the perceived value of the item.

Now, here is a list of what is currently known to be available through the library.

### Abacus books

*AmigaDOS Inside and Out*

*Amiga for Beginners*

*Amiga Disk Drives Inside and Out*

*Amiga Guide for Advanced Programmers*

*Amiga Internals*

*Amiga Tricks and Tips*

*Desktop Video Guide*

### Commodore Reference Manuals

*Amiga ROM Kernel, Libraries (2.0)*

*Amiga ROM Kernel, Devices (2.0)*

*Amiga ROM Kernel, Includes and AutoDocs (2.0)*

*Amiga ROM Kernel, Style Guide*

*Amiga ROM Kernel. Libraries and Devices (1.3)*
*Amiga ROM Kernel. Includes and AutoDocs (1.3)*
*Amiga ROM Kernel. Hardware Reference Manual (1.3)*

*Using the System Software 2.0*
*AmigaDOS Manual 3rd Edition*

## C Programming

*C Quick Reference*
*New C Primer Plus*
*The C Programming Language (K&R), 2nd Edition*
*The C Library*
*Programming in C*

## General Interest

*Amiga Applications*
*Beginners Guide to the Amiga*
*Amiga Format Book*
*The Amiga System*
*AmigaDOS*
*The Anatomy of the A590*
*ICPUG Newsletters*

## Graphics

*Amiga Artist*
*Amiga Vision*
*Inside Amiga Graphics*
*Using Deluxe Paint (V2)*
*Video Toaster User magazines*

## Programming

*Mapping the Amiga*
*Amiga Programmers Handbook*
*MC68881/2 Motorola Data Book*
*68000 Pocket Book*
*Microcomputer Puzzles*

## Commodore 64/128

*C64 Programmers Reference Guide*

*C128 Programmers Reference Guide*

*C64 Service Manual*

*C128 Service Manual*

*Advanced C64 Machine Code*

*The Anatomy of the C64*

*The Anatomy of the 1541*

## Videos

*History of the Amiga*

*The Deluxe Paint IV Video Guide*

*Amiga Animation Video Volume 2*

*CU Amiga's Guide to Amiga Video*

*Space Wars*

## Hardware

*Audio Sampler*

*Video Backup System*

*2400 baud Modem*

*Video Digitiser*

*Power Scanner*

## CD-ROMs

CUGI has a variety of CDTV and generic CD ROMs available. and I hope to list these in the next newsletter.

## New Rules

Starting from 20 November 1994, the CUGI library rules (such as they are) will be updated. The new rules and regulations should help speed up transactions and make tracking of who has what much more reliable.

The main difference to the old system is that when you take an item out of the library you will be *required* to sign it out, presenting your CUGI membership card for verification of your membership number.

I will also be making a full (and hopefully detailed) list of all available items, as well as re-evaluating the current charges and deposits for more costly items. When this is done, the new, comprehensive listing will be available on the CUGI BBS, and should also be mailed out to members with the second newsletter of the CUGI year (i.e. the first newsletter of 1995).

## Library Charges

Currently, charges are as follows:

| *Item/Category* | *Deposit* | *Rental* |
|---|---|---|
| Sampler | £5 | £2 |
| Video Backup System | £5 | £2 |
| Modem | £5 | £2 |
| Video Digitiser | £10 | £3 |
| Scanner | £20 | £5 |
| CD-ROMs | £3 | £1 |
| Videos | £5 | £2 |

The deposit for the scanner is relatively high because it is a delicate piece of hardware.

Since items in the library are effectively investments by the user group and members thereof, it is expected that members borrowing hardware items should be especially careful that the instructions are read and understood before use. The same guideline applies to the other items available.

Suggestions for library services are welcome, as are donations of items for inclusion in the library! Anyone interested in any items (whether listed or not) is welcome to talk to me at any of the monthly meetings.

Camera ready pages for this issue
were produced using:

Amiga 4000/040
AmigaTEX V3.1h
PostScript Printer

Photocopied by
whoever was available